

Work Order ID 85566

June-11-12 9:04:42 AM

U/R

85566

Page 1

Item ID: D350-748-101

Accept

N900040100

Setup Start ***NS1***

Revision ID: U/R

Stop ***NS2***

Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012 Start Qty: 1.00 ***1***

Cust Item ID:

Required Date: 05/07/2012 Req'd Qty: 1.00 ***1***

Customer:

Reference:

Approvals: Process Plan: MLJ Date: 12/06/11

Tooling:

Date:

Run Start ***NR1***

QC: Date: SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr

Revision Nbr

D350-748-141

F U/R

OK DP 12/6/11

100

0.00

100

DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy bluefile & type labels per PPPD350-748-101

CHG002

DAS 13410

1 Order MLJ 13-4-10

110

0.00

110

BENDING MACHINE - CROSSTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

Bend tube as per Dwg D350-748-141 using CNC bender program D350F and Folio FT
****UNDER BEND .225" PER SIDE****

DP 12-12-18

120

0.00

120

QC15- Crosstube Dimensional Check

QC

Memo

0.00

Quality Control

DAS 16 12/12/31

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

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Stop *NS2*

Start Date: 11/06/2012 Start Qty: 1.00

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Cust Item ID:

Required Date: 05/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start *NR1*

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
125		0.00							

125

HandFXtube

Hand Finishing Crosstubes

Memo

Stress relief

Heat treat crosstube as per QSI010 4.3

Temp: _____

Start time: _____

Finish time: _____

127

127

QC

Quality Control

QC6- Inspect dimensions to drawing

0.00

Memo

0.00

DAS
16
9-98

12/12/31

1212-09

126

Receive + Inspect

1X 8012-12-31

P/O.

accmen

P/O: 19433

CZ 13/03/27

need

attached c/c to w/o

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150 Outsource process-Cadplate per QSI017 4.1.9.1 0.00

150

Outsource3

Outsource process - Cad plate

Memo

0.00

Issue P/O: 181651

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per AMS-QQ-P-416B, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possibe Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

18743 c/L 13/01/07 ①

19086 c/L 13/02/12 ①

CL 12/12/11 ①

160 Receive & Inspect for Damage & Mat'l Certs 0.00

160

Packaging

Packaging

Memo

0.00

Ensure certificate of conformity is attached

14/12/20 ①

★ SEE W/D CHG ATTACHED

1x 13-2-27

Pto →

170 QC5- Inspect part completeness to step on W/O 0.00

170

QC

Quality Control

Memo

0.00

cert

14/13/3/27

POSITIVE RECALL

EFFECTIVE 12/1/11 AUTH JP

RELEASED JP DATE 13/4/12

W/O: 85566

WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-101 PAR #: _____ Fault Category: X-tube NCR: Yes No DQA: Not Date: 13/04/16
 Resolution: _____ Disposition: Repair QA: N/C Closed: OK Date: 13/4/12

NCR: 13.2490

WORK ORDER NON-CONFORMANCE (NCR)

DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
13/4/11	150	Found other CAD platting - that machining marks were above the call.	GP 13/4/11	Blend out marks - ensure that the 100% caution of the call. Return to CADATE FOR CAD Repair P/O # 19238 * All employees must accept the correct procedure as equipment			GP 13/4/11	DAS 10 9-89 13/3/01
			GP 13/4/11	Blend out marks. insert to not damage the curbs.	GP 13-02-28	S 13/04/11	GP 13/4/11	DAS 16 9-89 13/3/01
			GP 13/4/11	Return Back to CADATE. FOR Re CAD platting. P/O # 19238	GP 13/03/04	S 13/04/11	GP 13/4/11	DAS 16 9-89 13/3/11

NOTE: Date & initial all entries

CART

13/3/00

W/O: 85566		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D350-748-101 PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
		At NCR inspection it was found that the tube has motions on it. Further investigation found it was from reapplying the tube.	GP 13/4/11	EAD not Bleeding Acceptable per Email From CP to ED 13/04/01 (Attacker)	DAS 16 8-8 13/04/01	GP 13/4/11	GP 13/4/11	DAS 16 8-8 13/4/01
		Found at inspection that the part was thin on the center section of the tube. P.C.	DAS 16 8-8 Q32012 13/04/03	Scuff with 320 Grit Paper + clean as per Q22004 Re Part as per Q22004	13-4-5 JP. mm 13-4-6	DAS 16 8-8 13/04/09	DAS 16 8-8 Q32012 13/04/04	DAS 16 8-8 13/04/04

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N900040100

Setup Start

NS1

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Stop

NS2

Start Date: 11/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 05/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

210

QC5- Inspect part completeness to step on W/O

0.00

210

QC

Memo

0.00

Quality Control

220

Pick Kit

0.00

220

Packaging

Memo

0.00

Packaging

230

QC4- 100% Inspect kits for completeness

0.00

230

QC

Memo

0.00

Quality Control

DAS
16
3/10/09

43/4/8

134.10

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Start Date: 11/06/2012 Start Qty: 1.00

1

Cust Item ID:

Required Date: 05/07/2012 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
240		0.00							
240	Packaging								
Packaging	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP D350-748-101								
	Location: <u>14</u>								
	PPP Rev: <u>5</u>								
250	QC21- Final Inspection - Work Order Release	0.00							
250									
QC	Memo	0.00							
Quality Control									

Handwritten notes and stamps:
 13-4-10
 13/4/11
 13-04-10
 DAS 06 9-89
 [Signature]

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Picklist Print

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Page 1

Work Order ID: 85566

85566

Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 06-07-05 JLM
 IPP Rev:B Update qty of MS21042L5 06-09-12 KJ VERIFY
 BY:DD
 IPP Rev:C Rev B 07-11-15 DD
 IPP Rev D Combined manufacturing 08.04.02 EC verified by: DD
 IPP Rev:E 08-06-24 revD as per dwg DD verified by:EC IPP Rev:F
 10.08.04 added QSI010 4.3 DD verf:EC
 IPP REV:G ADD UNDER BEND COMMENT 12-05-28 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D350-748-141TRN		Manufactured	No			110	Each	3.0000	1	1			
D350-748-141TRN									**			JW 12-12-04	
Crosstube Turning Detail													

Location	Loc Qty	Loc Code
LG	3	
74718	1	
83277	1	
83278	1	

ALS4-1032-225		Purchased	No			200	Each	731.0000	1	1			
AI S4-1032-225									**			JP / M / 13.04.08	
Insert													

Location	Loc Qty	Loc Code
ST281	708	
108696	146	
110768	62	
118386	55	
118966	68	
121269	377	
ST282	23	
120410	10	
120451	13	

124468

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD10 NAS1149D0363J Purchased No

200 Each 0.0000 1 1

AN960JD10

Washer

D2856-400 Manufactured No

200 f 207.0445 1.181 1.243158

D2856-400

Abrasion Strip

B* 122378

**

J.P. / M / 13.04.08

**

J.P. / M / 13.04.08

Location

Loc Qty

Loc Code

ST403

197.6

95159

81875

197.6

ST409

9.4445

63735

0.6696

68076

0.3149

71164

8.46

D3502-1 Manufactured No

200 Each 79.0000 2 2

D3502-1

Support

**

J.P. / M / 13.04.08

Location

Loc Qty

Loc Code

LG050

60

86876

77041

60

ST051

19

73419

11

74873

8

MS21920-20 Purchased No

200 Each 84.0000 2 2

MS21920-20

Clamp (per MIL-DTL-8783C)

**

J.P. / M / 13.04.08

Location

Loc Qty

Loc Code

LG050

84

124695

116799

8

120676

8

121067

18

121274

50

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Shop Packet Print

Page 2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

MS27039-1-10

Purchased

No

200

Each

225.0000

1

1

MS27039-1-10

Screw

**

JP m / 13.04.08

Location

Loc Qty

Loc Code

GA

100

124326

120449

100

ST291

25

120120

25

ST308

100

122027

100

AN4-41A

Purchased

No

220

Each

539.0000

8

8

AN4-41A

Bolt

**

C 13/4/18

Location

Loc Qty

Loc Code

360

181

121185

181

ST360

358

115108

3

115705

7

118451

29

118838

50

119328

100

120423

150

121205

15

121573

4

120423

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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Parent Item: D350-748-101

D350-748-101

Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

AN4-6A

Purchased

No

220

Each

1,385.000

AN4-6A

Bolt

SMP

Location

Loc Qty

Loc Code

355

93

121631

93

ST356

1292

119017

792

121243

500

**** 16**

16

123358

AN5-32A

Purchased

No

220

Each

245.0000

AN5-32A

Bolt

SMP

Location

Loc Qty

Loc Code

ST339

145

119862

50

120423

75

120910

20

ST340

100

121541

100

**** 4**

4

M124936

AN960JD416

NAS1149D0463J

Purchased

No

220

Each

30.0000

AN960JD416

Washer

SMP

Location

Loc Qty

Loc Code

ST351

30

116289

10

119097

20

**** 32**

32

124778

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

AN960JD516

NAS1149D0563J

Purchased

No

220

Each

16.0000

AN960JD516

Washer

SM

Location

Loc Qty

Loc Code

ST338

16

2612

16

220

Each

75.0000

D3500-1

Manufactured

No

D3500-1

Saddle

SM

Location

Loc Qty

Loc Code

ST423

14

78595

14

ST424

31

73405

20

73406

8

76000

3

ST425

30

76940

30

D3501-1

Manufactured

No

220

Each

367.0000

D3501-1

Bushing

SM

Location

Loc Qty

Loc Code

ST051

367

67757

4

73391

6

74866

207

77033

61

81955

26

83253

63

8
**

11/22/52

4
**

90058

16
**

88532 213/4/9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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Parent Item: D350-748-101

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Parent Item Name: Crosstube Installation, High Fwd

Start Date: 11/06/2012

Required Date: 05/07/2012

Start Qty: 1.00

Required Qty: 1.00

MS21042L4

Purchased

No

220

Each

3,423.000

24

24

MS21042L4

Nut

SM

Location

Loc Qty

Loc Code

ST300

3423

119075

116

121011

232

121444

2775

121652

300

MS21042L5

Purchased

No

220

Each

1,381.000

4

4

MS21042L5

Nut

SM

Location

Loc Qty

Loc Code

300

500

121652

500

ST300

881

108827

4

116105

5

116548

43

117611

18

119109

795

17651

8

2937

8

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Shop Packet Print

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

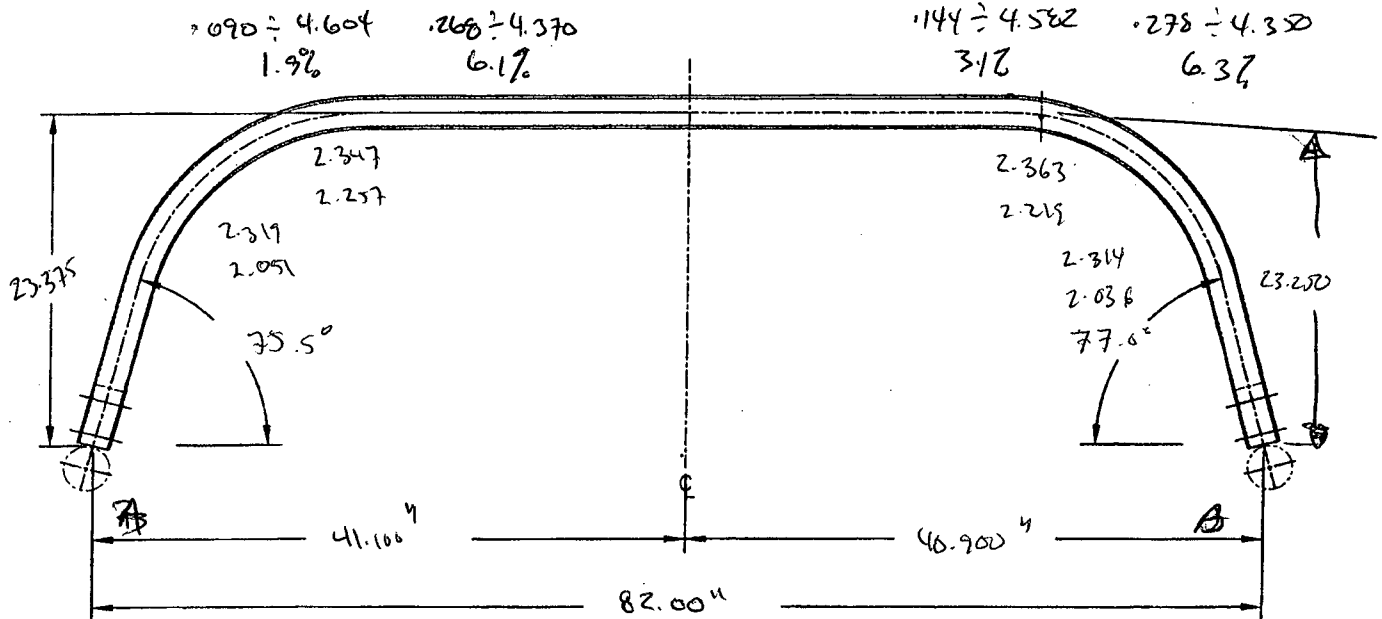
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order:	85566
Description: Crosstube High Fwd (AS350/355)	Part Number:	D350-748-101
Inspection Dwg: D350-748-141	Rev: F	Page 1 of 1

Required Dimension	Min	Max
Height	23.13	23.37
1/2 Span	40.78	41.02
Angle	75	77
Total Span	81.56	82.04



Comments	
twist = 0.094	
Side A crushing	= 1.9% @ top 6.3% @ Bottom
Side B crushing	= 3.1% @ top 6.1% @ Bottom

OK per
Rev. G
P11/12/21

QC15 Inspection	DAS
Date	12/12/21

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Item	Qty	Part Number	Description
	-141		
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6015-125	CROSSTUBE (OR D6017-115)
3	2	D3502-1	SUPPORT
4	2	D2856-400-710	ABRASION STRIP
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
8	1	MS27039-1-10	SCREW

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115
FINISHED LENGTH = 110.270±0.06
- 2) FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- 7) WEIGHT: 30.45 lbs
- 8) PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø0.297 HOLE.
- 9) BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH.
NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO
BENDING IS 6% BASED ON O.D.
- 11) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING. ACCEPTABLE TO
VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.
- 12) INSTALL D2856-400-710 ABRASION STRIPS WITH A GAP ON BOTTOM SIDE OF CROSSTUBE,
CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 13) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES,
NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY.
CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE
MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO
CRACKING/CHIPPING/GROOVES.
- 14) TORQUE CLAMPS 60 TO 80 IN-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT
NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.
- 15) MAX TWIST AFTER BENDING: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN
CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.25 (ZN C1-3).

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 85566 MLT
12/00/11

UNDER REVIEW

RELEASED
2011-01-18

F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	92	DRAWING NO.	REV. F
MFG. APPR.	92	D350-748-141	SHEET 1 OF 4
APPROVED	92	TITLE	SCALE
DE APPR.	92	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

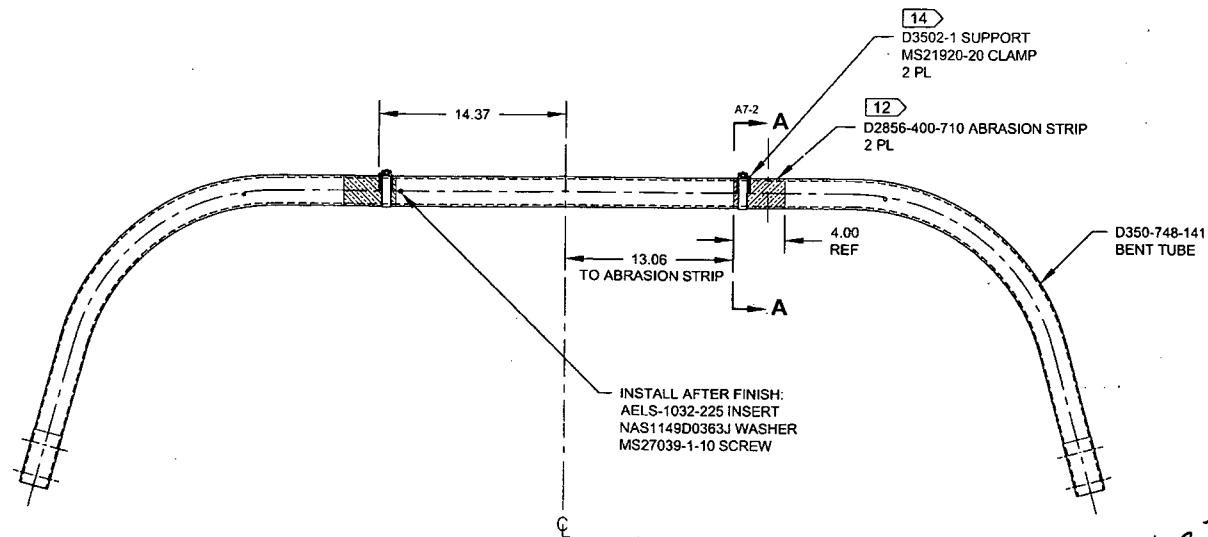
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

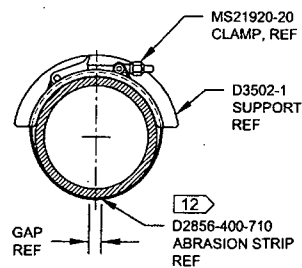
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



**D350-748-141
ASSEMBLY DETAIL**



SECTION A-A D4-2
SCALE 4X

14.37
14.37
287
UNDER REVIEW
11.07.11

RELEASED
2011-01-18

DESIGN		DART AEROSPACE LTD	
DRAWN		HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. F
MFG. APPR.		D350-748-141	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	<small> COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD. </small>	

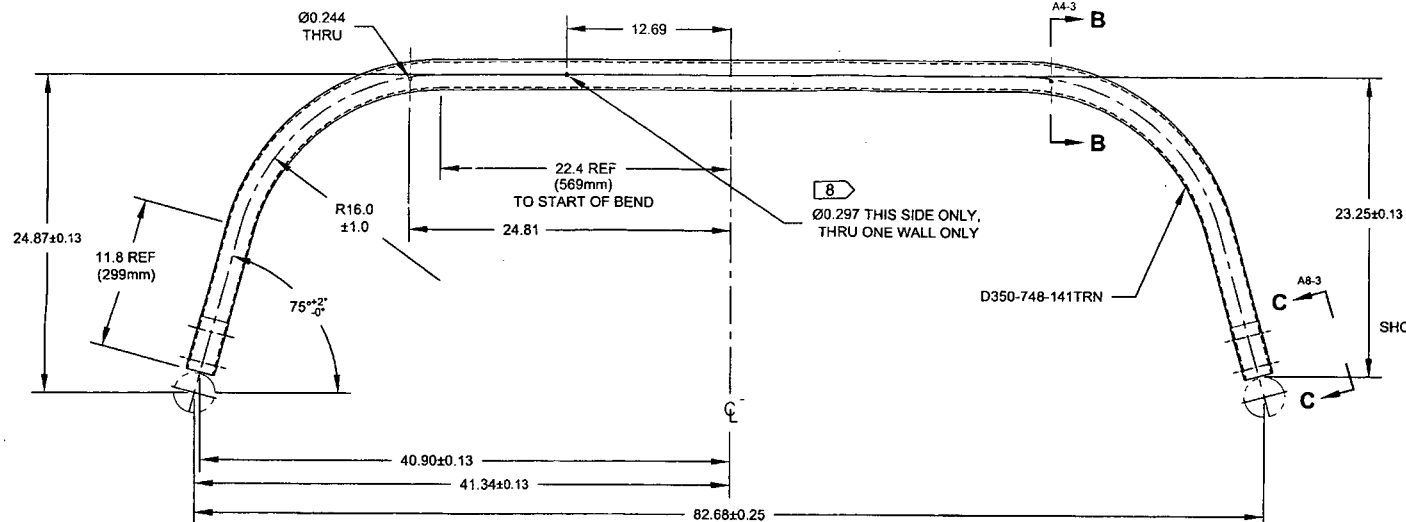
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

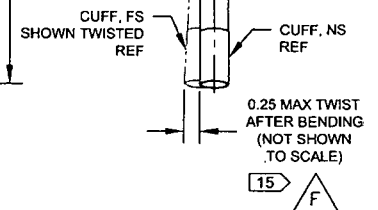
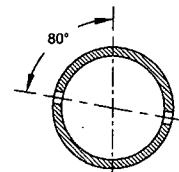
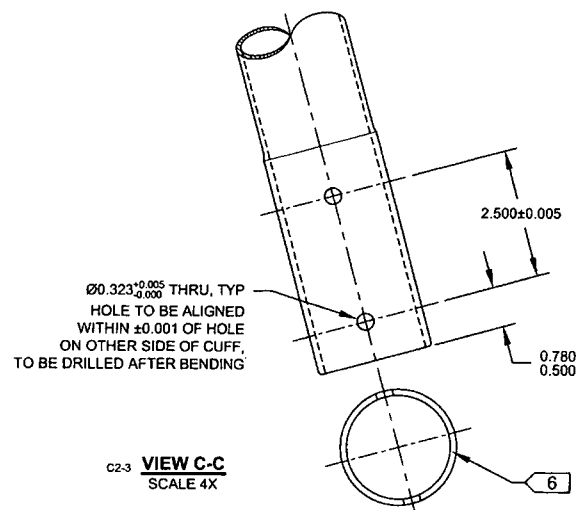
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



D350-748-141
BENDING AND DRILLING DETAIL [10]



UNDER REVIEW

RELEASED
2011-01-18

DESIGN	QP	DART AEROSPACE LTD	
DRAWN	QP	HAWKESBURY, ONTARIO, CANADA	
CHECKED	JB	DRAWING NO.	REV. F
MFG. APPR.	CB	D350-748-141	SHEET 3 OF 4
APPROVED	JB	TITLE	SCALE
DE APPR.	JB	CROSSTUBE (AS 350/355 HI FWD)	NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

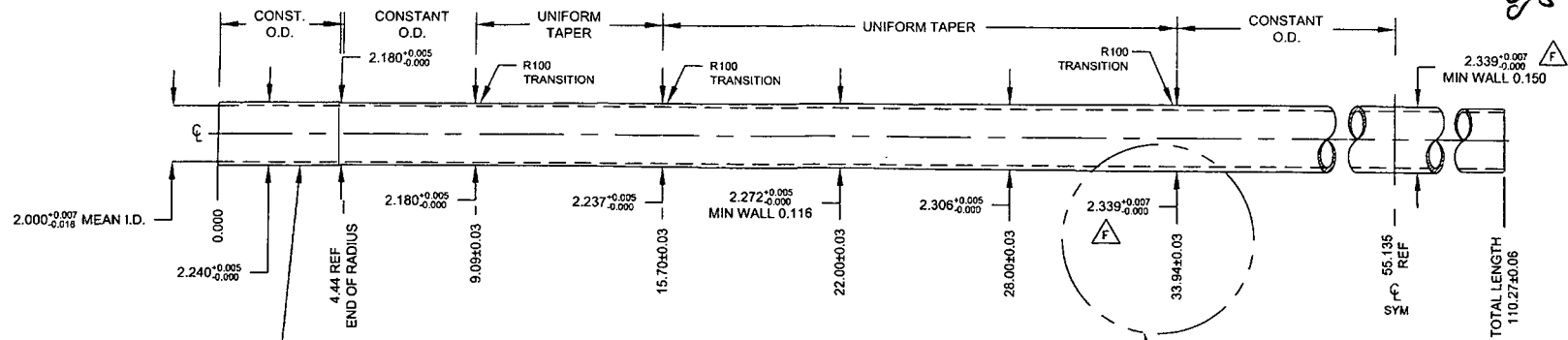
Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1

0.5566



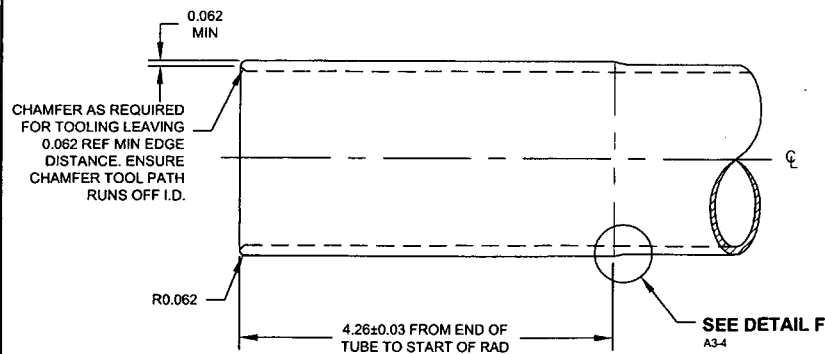
SEE DETAIL D
A6-4

SEE DETAIL E
A1-4

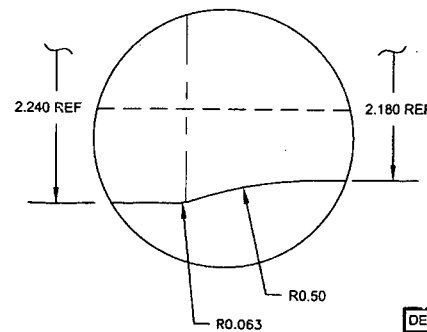
UNDER REVIEW

11.07.12

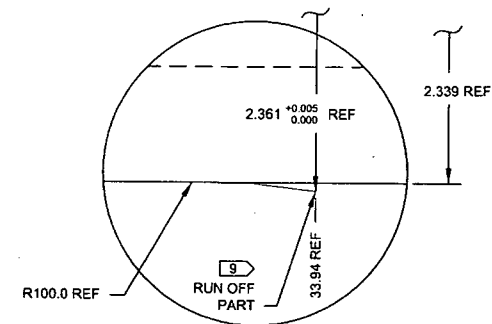
**D350-748-141TRN
TURNING DETAIL**



**DETAIL D:
CROSSTUBE CUFF** C7-4
SCALE 3X



**DETAIL F:
CUFF TRANSITION** A5-4
NOT TO SCALE



**DETAIL E:
TAPER RUN-OFF** C3-4
NOT TO SCALE

RELEASED
2011-01-13

DESIGN	40	DART AEROSPACE LTD	
DRAWN	40	HAWKESBURY, ONTARIO, CANADA	
CHECKED	13	DRAWING NO.	REV. F
MFG. APPR.	13	D350-748-141	SHEET 4 OF 4
APPROVED	13	TITLE	SCALE
DE APPR.	13	CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	10.11.23	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
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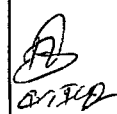

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
11.10.05	161	LOAD TUBE TO 3500 ^{lb} FOR 1 MINUTE. REF D.S. EMAIL.		1303.26	1	 CHIEF	 1303.26
11.10.05	162	NDT TUBE.					

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Chris Provencal

From: David Shepherd <dshepherd@dartaero.com>
Sent: Tuesday, April 27, 2010 3:40 PM
To: 'Mike Petsche'
Cc: 'Bill Beckett'; 'L Lacelle'; 'Chris Provencal'; 'Dan Stow'; ssheldon@dartaero.com
Subject: 350 crosstubes

Mike,

I discussed the 350 crosstube load testing with Bill a little while ago and this plan makes sense to him.

So, my recommendation to clear these crosstubes is to load the fwd crosstubes to 3500 lb and the aft crosstubes to 3000 lb in the deflection test rig and document on the work orders that this test has been completed. Hold max load for 1 minute. Per TP-D350-748-2, these loads represent the maximum load on these crosstubes at gross weight and are below the yield point of the material. I would like to request that Chris Provencal witness these tests and sign off the work orders based on his experience with Dart landing gears. My feeling is that if there is a problem with the parts, it will manifest itself during this load test. I, for one, would feel a lot more confident in testing each crosstube in this manner than relying totally on what Exova has to say. I think it would be very difficult to reach a conclusion on the whole batch on the basis of cracks in two parts from the batch.

I believe that we can accomplish this before next Friday, which also gives us time to hear what Exova has to say in case it has an impact on our decision. So far, what I have seen from Exova shows me that there are fluctuations in the heat treating but the tubes are heat treated to our specification.

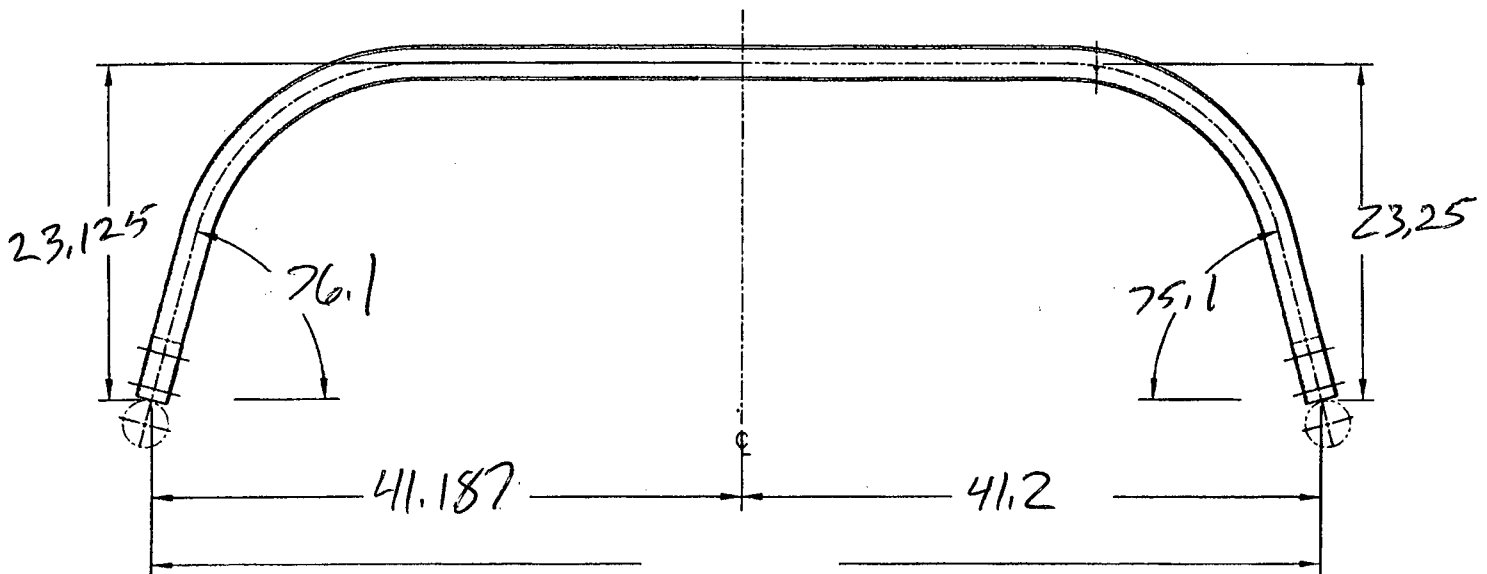
For this reason, I believe we should tell DHS that it looks like we will be able to start shipping 350 crosstubes by May 7th pending a successful Engineering test of the material.

David.

Measured Before De-Stress

DART AEROSPACE LTD		Work Order:	85566
Description: Crosstube High Fwd (AS350/355)		Part Number:	D350-748-101
Inspection Dwg: D350-748-141	Rev: F	Page 1 of 1	

Required Dimension	Min	Max
Height	23.12	23.38
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.55	82.05
Bending Passes	7	--
Crushing	--	6%
Twist	--	0.25



	Side A	Side B
Bending Passes	37	36
Crushing		
Comments		
Twist 0.162		

DP
12-12-18

QC15 Inspection	
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	
B	10.08.23	Dwg Rev updated	KJ	
C	11.11.07	Dwg Rev updated	KJ	
D	12.04.16	Added bending, crushing & twist dimensions	KJ	<i>AP</i>

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
182269	1	67436

Shipped Complete

Customer **215**

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO18651		STEEL	2012/12/19	client

Container Type	# Of Containers	Container Comments
NIL	1	

CERTIFICAT

PACKING	
----------------	--

Quantity Shipped: 5

Pounds Shipped: 155,00

Quantity Remaining: 0

Pounds Remaining: 0,00

CERTIFICAT

Quantity Shipped: 5

Pounds Shipped: 155,00

Signature:

Date:

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Recu de Livraison

Order	Shipper	Shipping Seq.
182269	1	67436

Shipped Complete

Customer

215

DART AEROSPACE

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Shipped To:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

Purchase Order Number	Customer Shipper No.	Material Type	Order Date	Carrier
PO 18651		STEEL	2012/12/19	client
Quantity	Part No. / Part Name / Part Description			Pounds
5	D350-748-101 CROSSTUBE (1) CROSSTUBE REFERENCE 90046			155,
	(1) D350-748-101 CROSSTUBE REFERENCE: 85566			
	(1) D350-748-101 CROSSTUBE REFERENCE 87340			
	(1) D350-748-101 CROSSTUBE REFERENCE 91335			
	(1) D350-748-101 CROSSTUBE REFERENCE 85567			
	CONTENANT: 1 NIL			

CERTIFICAT

Quantity Shipped: 5

Pounds Shipped: 155,00

Signature:

Date:



Metcor Inc.

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Page 2 / 2

Certificat de Conformité
Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

COMMANDE DU CLIENT customer po	BON DE LIVRAISON DU CLIENT customer shipper no.	MATÉRIEL material	CODE DE TRAITEMENT mat'l heat code	NUMÉRO DE LOT lot number
PO18651				
SPÉCIFICATIONS DU PROCÉDÉ processing specifications				
STRESS REL				
SAE AMS 2759/1 REV.E				
EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results				
Visual				
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
5	155	D350-748-101 CROSSTUBE (1) CROSSTUBE REFERENCE 90046		
		(1) D350-748-101 CROSSTUBE REFERENCE: 85566		
		(1) D350-748-101 CROSSTUBE REFERENCE 87340		
		(1) D350-748-101 CROSSTUBE REFERENCE 91335		
		(1) D350-748-101 CROSSTUBE REFERENCE 85567		
		CONTENANT: 1 NIL		



Metcor Inc.

560, boul. Arthur-Sauvé, St-Eustache (Québec) J7R 5A8
Tél. 450 473-1884
Télécopieur/Fax administration 450 491-5498
Télécopieur/Fax production 450 491-6454

Page 1 / 2

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:
DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K8A 1K7

COMMENTAIRES / comments

CERTIFIÉ par / Certified by:



DATE: 2012-12-20

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ ;
ST-EUSTACHE, QC, J7R 5A8

Tel: 450-473-1884 / Fax: 450-491-5498

Certificat de Conformité Détaillé

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
182269	1

CLIENT / customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY

ON K6A 1K7

1

Operation	Temp. spécifiée Specified Temp	Temps de trempe Spécifié Specified Soak Temp	Atmosphère	Carbone Carbon Potential	Q-Media Q-Temp	Four # Furnace #	Date Départ Start Date	Heure d'entrée Time In	Heure de sortie Time Out	Date Complétée Date complete
2.00 PREPARING	COMPTAGE									
3.00 STRESS RE	343°C+/-6°C	2:00	air			701				
4.00 FINAL INSP							12-20-2012			12-20-2012

COMMENTAIRES / comments

LES TRAITEMENTS THERMIQUES SUR CETTE COMMANDE A ÉTÉ FAIT EN UTILISANT DES ÉQUIPEMENTS EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION AMS2759.
TOUTES LES OPÉRATIONS DE TRAITEMENT THERMIQUE ONT ÉTÉ FAITES EN CONFORMITÉ AVEC LES REQUIS DE LA SPÉCIFICATION DEMANDÉE ET TOUTES LES VÉRIFICATIONS ET LES TESTS DEMANDÉES ONT ÉTÉ FAITES ET DOCUMENTÉES.
AUCUN CHANGEMENT OU DÉROGATION N'A ÉTÉ FAITE PAR RAPPORT AU TRAITEMENT THERMIQUE DEMANDÉ.
ON CERTIFIE QUE LE MATÉRIEL A ÉTÉ FABRIQUÉ, ÉCHANTILLONNÉ, TESTÉ ET INSPECTÉ EN ACCORD AVEC LES SPÉCIFICATIONS DU MATÉRIEL ET LE BON DE COMMANDE ET LE MATÉRIEL RENCONTRE LES EXIGENCES SPÉCIFIÉES.

ACCOMPLISHED USING HEAT TREATMENT EQUIPMENT THAT MEETS THE REQUIREMENTS OF AMS 2759. ALL THE HEAT TREATMENT OPERATIONS WERE ACCOMPLISHED IN ACCORDANCE WITH THE REQUESTED/REQUIRED HEAT TREATMENT SPECIFICATION AND ALL REQUIRED VERIFICATIONS TEST HAVE BEEN PERFORMED AND DOCUMENTED. NO UNAUTHORIZED CHANGES OR ALL THE HEAT TREATMENT PROCESSING PERFORMED ON THIS ORDER WAS DEVIATIONS TO REQUIRED HEAT TREATMENT SPECIFICATIONS OR PROCEDURES HAVE BEEN PERFORMED.
WE CERTIFY THAT THE MATERIAL WAS MANUFACTURED, SAMPLED, TESTED AND INSPECTED IN ACCORDANCE WITH THE MATERIAL SPECIFICATION AND THE PURCHASE ORDER AND WAS FOUND TO MEET THE REQUIREMENTS.

APPROUVÉ par / Approved by:

John Doe



DATE: 2012-12-20

/ Nous certifions que toute l'information comprise sur ce rapport est exacte et conforme aux requis du client. / We certify that all the information on this report is exact and in accordance with the order requirements.



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO18743

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 1 of 3

Order From : VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

204 633 9420

204 633 8033

Buyer

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

Destination-Collect

Ship To :

DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

REVISED

Line Nbr	Reference Revision ID Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	Req Qty/ Unit of Measure	Ship Method	Unit Price	Extended Price
1	85566	D350-748-101 CROSSTUBE	1/18/13 Yes	1.00	Day & Ross coll	\$776.2500	\$776.25

Special Ins:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd

2	85567	D350-748-101 CROSSTUBE	1/18/13 Yes	1.00	Day & Ross coll	\$776.2500	\$776.25
---	-------	---------------------------	----------------	------	-----------------	------------	----------

Speci:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd

8P13-01-28

Change Nbr:

3

Change Date: 1/21/13

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required YES NO



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO18743

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 2 of 3

Order From :

VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Contact Name

Vendor Phone

204 633 9420

Vendor Fax

204 633 8033

Vendor Account Nbr

Buyer

Chantal Lavoie

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

3	87340	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$776.2500	\$776.25
---	-------	---------------------------	---------	------	-----------------	------------	----------

Yes

Special Inst:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd

4	90046	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$1,151.2500	\$1,151.25
---	-------	---------------------------	---------	------	-----------------	--------------	------------

Yes

Special Inst:

Stress relief at 375degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 defree for 8 hrs,
Chromate Treat
C of C req'd
EXTRA CHARGE: MPI INSPECTION

5	91335	D350-748-101 CROSSTUBE	1/18/13	1.00	Day & Ross coll	\$776.2500	\$776.25
---	-------	---------------------------	---------	------	-----------------	------------	----------

Yes

2013-01-28

Change Nbr:

3

Change Date: 1/21/13

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - YES NO



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO18743**

Purchase Order Date 1/07/13

PO Print Date 1/21/13

Page Number 3 of 3

Order From :

VC-CAD002

CADORATH COATING
2150 LOGAN AVE.
WINNIPEG, MB R2R 0J2
CA

Contact Name

Vendor Phone

Vendor Fax

Vendor Account Nbr

204 633 9420

204 633 8033

Buyer

Requisition Nbr

Tax Resale Nbr

Terms

Currency

FOB

Chantal Lavoie

10127-2607

Net 30

CAD

Destination-Collect

Special Inst:

Stress relief at 375 degree for 5hrs
Magnetic Particle Inspect per ASTM E1444
Cad Plate per AMS-QQ-P-416B, Class 1,
Type 2
Embrittle relief at 375 degree for 8 hrs,
Chromate Treat
C of C req'd

PO Total:

\$4,256.25

5013-01-28

Change Nbr:

3

Change Date: 1/21/13

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required **YES** NO

Chantal Lavoie

From: Linda Lacelle <llacelle@dartaero.com>
Sent: January 21, 2013 11:47 AM
To: Chantal
Subject: FW: CrossTube P/O 18743 S/N 90046

Could you pls revise PO

From: Patrick Smith [mailto:psmith@dartaero.com]
Sent: January-21-13 11:46 AM
To: llacelle@dartaero.com
Subject: FW: CrossTube P/O 18743 S/N 90046

FYI

From: chris jones [mailto:chris.jones@cadorath.com]
Sent: January-21-13 11:26 AM
To: 'Patrick Smith'
Cc: 'Cisco Lindo'
Subject: RE: CrossTube P/O 18743 S/N 90046

Hi Pat

Sorry I forgot to include in the last email that there will be a charge of \$375 for the work performed so far. We have MPI inspected the part twice and it was run through the plating process. If you have any questions please let Cisco or I know.

Sincerely



**Chris
Jones**

Quality Assurance
Cadorath

Director of

Strength through Diversity
Serving industries that better the world

2070 Logan Avenue
Winnipeg, Manitoba, Canada R2R 0H9

Phone 204.633.2707 **Toll Free** 800.463.7069 **Fax**
204.632.7663 **Cell** 204.800.1190
chris.jones@cadorath.com **www.cadorath.com**

Cadorath News

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From: Patrick Smith [mailto:psmith@dartaero.com]
Sent: January-21-13 8:34 AM
To: chris jones; cisco@cadorath.com
Cc: cprovençal@dartaero.com; Eric Downing; llacelle@dartaero.com; dshepherd@dartaero.com; Mike Petsche
Subject: FW: CrossTube P/O 18743 S/N 90046

Hi Chris,

Our engineering staff has requested the tube returned as is, we will carry out the grinding, inspection and return for Cadmium plating with our next shipment.

Thanks,

Pat

From: Chris Provencal [<mailto:cprovencal@dartaero.com>]

Sent: January-21-13 9:16 AM

To: 'Patrick Smith'; David Shepherd

Cc: 'Eric Downing'; llacelle@dartaero.com; Mike Petsche

Subject: RE: CrossTube P/O 18743 S/N 90046

Pat,

My preference in this case would be to have the tube returned, we grind the tube, then return it to Cadorath in the next shipment. The grinding needs to be done longitudinally, and we won't be able to inspect the surface after CAD plate.

-Chris

From: Patrick Smith [<mailto:psmith@dartaero.com>]

Sent: Monday, January 21, 2013 7:26 AM

To: 'chris jones'

Cc: 'Cisco Lindo'; cprovencal@dartaero.com; Eric Downing; llacelle@dartaero.com

Subject: RE: CrossTube P/O 18743 S/N 90046

Hi Chris,

Go ahead and blend the mark and cadmium plate the tube, please mark the area on the tube once it is ready to ship and we will carry out a wall thickness check upon its arrival.

Thanks for the heads ups.

Regards,

Pat

From: chris jones [<mailto:chris.jones@cadorath.com>]

Sent: January-18-13 4:33 PM

To: 'Patrick Smith'

Cc: 'Cisco Lindo'

Subject: CrossTube P/O 18743 S/N 90046

Good afternoon Pat

We have processed a crosstube on P/O 18743 and after plating we have found what appears to be a crack in the tube at MPI. Our Ndt technician has called out a "axial crack 2" long into parent material on outside of crosstube" Now the concern we have is that under white light inspection it appears to be more of a gauge then a crack but we do not want to attempt to blend it out without your okay. Could you please let us know if there are acceptable blend limits or is there another course of action you would like us to take.

Sincerely



**Chris
Jones**

Quality Assurance
Cadorath

Director of

Strength through Diversity
Serving industries that better the world

2070 Logan Avenue
Winnipeg, Manitoba, Canada R2R 0H9

Phone 204.633.2707

Toll Free 800.470.7069

Fax

204.632.7663

Cell 204.801.4190

chris.jones@cadorath.com **www.cadorath.com**

Cadorath News

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CADORATH GROUP NON CONFORMANCE REPORT

CADORATH AEROSPACE ☐

CADORATH DISTRIBUTION ☐

CADORATH COATING ☒

UNIFLYTE ☐

NOTE: THIS FORM MUST BE COMPLETED BY: CUSTOMER ☒ VENDOR ☐ BEFORE PROCESSING OF PART(S)

NCR#: **C1125**

CUSTOMER: ☒ **Dart Aerospace**

DATE: **01/22/13**

VENDOR: ☐ **N/A**

CADORATH/UNIFLYTE P/O #:

N/A

PART DESCRIPTION: **Crosstube**

CADORATH/UNIFLYTE W/O #:

120852

CUSTOMER P/O #: **18743**

PART #: **D350-748-101**

SERIAL #: **90046** QUANTITY: **one (1)**

PURCHASE ORDER INSTRUCTIONS: **CADMIUM PLATE IAW AMS-QQ-P-416C TYPE 2 YELLOW CLASS 2**

DISCREPANCY: **ONE CRACK 2 INCHES IN LENGTH WAS FOUND DURING MPI.**

TRAVIS SZABO

CADORATH/UNIFLYTE INSPECTION DEPARTMENT

CI
22

CUSTOMER: ☒

PLEASE COMPLETE THIS PORTION, SIGN AND RETURN TOP COPY OF THIS FORM TO CADORATH/UNIFLYTE

VENDOR: ☐

DATE: **01/22/13** P/O: **18743**

CUSTOMER INSTRUCTIONS: ☐

ATTENTION: QA-Inspection

VENDOR CORRECTIVE ACTION: ☐

AUTHORIZED SIGNATURE

NAME AND TITLE

DATE: **10/13/10**

FORM: OPS 097
REVISION: 3

Packing Slip



Cadorath Coating

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

INVOICE NUMBER:

S 64236

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Sold To: Dart Aerospace Ltd. 1270 Aberdeen St. Hawksbury, ON K6A 1K7
ShipTo:

Customer Order #: PO18743	Date Received: Jan-09-2013	Terms: NET 30 DAYS	G.S.T. #: 10071 6547 RT0001	Ship Via:	Ship Date: Jan-22-2013
-------------------------------------	--------------------------------------	------------------------------	---------------------------------------	------------------	----------------------------------

Item #	Qty	P/N & Description	
1	1 EA	CROSSTUBE	S/N 85566
		P/N d350-748-101	W/O 120849
2	1 EA	CROSSTUBE	S/N 85567
		P/N d350-748-101	W/O 120850
3	1 EA	CROSSTUBE	S/N 87340
		P/N d350-748-101	W/O 120851
4	1 EA	CROSSTUBE	S/N 91335
		P/N d350-748-101	W/O 120853
5	1 EA	CROSSTUBE	S/N 90046
		P/N d350-748-101	W/O 120852

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNEE TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120853

INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 91335

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector: _____

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120851
INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 87340

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.

Approved Inspector:



**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNEE TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120850

INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 85567

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector: _____

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jan-22-2013

CONSIGNEE TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 120849
INVOICE #: 64236

**CONTRACT OR
PURCHASE ORDER #** PO18743

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 85566

STRIP AND CADMIUM PLATING IAW AMS-QQ-P-416C TYPE 2
YELLOW CLASS 2. MPI IAW ASTM-E-1444. BAKE HEAT CHART # 13-
30, 13-53.

**CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.**

Approved Inspector:



IMPORTANT - PLEASE READ
 ATTENTION FOR MATCHING UP WITH
 OUR DESCRIPTIVE INVOICE THAT
 WILL FOLLOW. THIS IS THE ONLY
 COPY YOU WILL RECEIVE.

IMPORTANT - VEUILLEZ S.V.P. LIRE
 GARDER CETTE COPIE POUR
 VÉRIFICATION AVEC L'ÉTAT DE COMPTE
 DÉTAILLÉ QUI SUIVRA. CECI EST LA SEULE
 COPIE QUE VOUS RECEVREZ.



CUSTOMER'S COPY
COPIE DU CLIENT

NIR R-500048-5

G.S.T./T.P.S.
R119361467

www.dayross.ca

WPG 1745301

ORIG.		PRO NO. / N° DE FACTURE		OTT DEST.	PICK-UP DATE / DE CUEIL. JAN 22 2013	PPD/COLL C	INPUT MZC	CODE MZC	RATE IBM	MISC./DIVERS
SHIPPER / EXPÉDITEUR CADORATH PLATING CO LTD 2150 LOGAN AVE WINNIPEG MB R2P 0J2				LEVEL OF SERVICE / NIVEAU DE SERVICE GENERAL LTL		DECLARED VALUE / VALEUR DÉCLARÉE		C.O.D. AMOUNT MONTANT C.R.		FUNDS / FONDS C.O.D. / CR. RATE / TAUX
CONSIGNEE / CONSIGNATAIRE DART AEROSPACE LTD 1270 ABERDEEN STREET HAWKESBURY ON K6A 1K7 PH.# 6323336				BILL TO / FACTURÉ À DART AEROSPACE LTD 1270 ABERDEEN STREET HAWKESBURY ON K6A 1K7		SPECIAL INSTRUCTIONS / INSTRUCTIONS SPÉCIALES				
ADVANCE CARRIER / NOM DU TRANSPORTEUR PRÉCÉDENT				ADVANCE PRO NO. / N° DE FACT. PRÉ.		BEYOND CARRIER NAME / TRANSPORTEUR SUBSÉQUENT				
PIECES PIÈCES	DESCRIPTION OF ARTICLES & MARKS / DESCRIPTION DES OBJETS ET DE LEURS MARQUES	WEIGHT POIDS	LB	RATE / TAUX	GROSS AMOUNT MONTANT BRUT	% DISC % ESC	NET AMOUNT MONTANT NET			
1	ASWT TRFAMT TARIFF PONUM FTAXLT ONHST PC/PLATED PARTS VOLUME WEIGHT IN POUNDS TARIFF AMOUNT 30508Q 18743 FUEL SURCHARGE LTL ONHST/TVH (131) 0001@ 090.00x034.00x034.00 @IN TOTAL CUBIC FEET		120 602 602 602 60.21				243.75 54.60 38.79			
1	TOTAL # OF PIECES	YARD ARRIVAL TIME AT CONSIGNEE								
ADDITIONAL CHARGES FRAIS ADDITIONNELS		<input type="checkbox"/> HOME DELIVERY LIVRAISON À MAISON		<input type="checkbox"/> EXCESS FLOORS ÉTAGE EXCÉS		<input type="checkbox"/> REDELIVERY 2-ÈME LIVRAISON		48105		

SEE TERMS AND CONDITIONS ON REVERSE
 NO CLAIMS WILL BE ACCEPTED UNLESS NOTED
 ON CARRIER'S COPY AT TIME OF DELIVERY

VOIR TERMES ET CONDITIONS AU VERSO
 AUCUNE RÉCLAMATION NE SERA ACCEPTÉE À MOINS D'ÊTRE
 INDIQUÉE SUR LA COPIE DU TRANSPORTEUR LORS DE LA LIVRAISON

PROOF OF DELIVERY
PREUVE DE LIVRAISON

PAYMENT DUE
 UPON RECEIPT
 PAIEMENT SUR
 RÉCEPTION

.00c

Packing Slip



Cadorath Coating

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

INVOICE NUMBER:

S 64692

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Sold To: Dart Aerospace Ltd. 1270 Aberdeen St. Hawksbury, ON K6A 1K7
ShipTo:

Customer Order #: PO19086	Date Received: Feb-15-2013	Terms: NET 30 DAYS	G.S.T. #: 10071 6547 RT0001	Ship Via:	Ship Date: Feb-22-2013
-------------------------------------	--------------------------------------	------------------------------	---------------------------------------	------------------	----------------------------------

Item #	Qty	P/N & Description	
1	1 EA	CROSSTUBE	S/N 85566
		P/N D350-748-101	W/O 121918
2	1 EA	CROSSTUBE	S/N 91335
		P/N D350-748-101	W/O 121922
3	1 EA	CROSSTUBE	S/N 87340
		P/N D350-748-101	W/O 121920
4	1 EA	CROSSTUBE	S/N 85567
		P/N D350-748-101	W/O 121919

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Feb-22-2013

CONIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 121919

INVOICE #: 64692

**CONTRACT OR
PURCHASE ORDER #** PO19086

DESCRIPTION: CROSSTUBE

QTY 1

P/N # D350-748-101

S/N # 85567

STRIP CADMIUM PLATING IAW MIL-STD-871.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector:

A handwritten signature in black ink, appearing to be 'Z' or similar, written over a horizontal line.

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Feb-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 121920

INVOICE #: 64692

**CONTRACT OR
PURCHASE ORDER #** PO19086

DESCRIPTION: CROSSTUBE

QTY 1

P/N # D350-748-101

S/N # 87340

STRIP CADMIUM PLATING IAW MIL-STD-871.

CERTIFICATE: I certify that the items indicated here on have been inspected and tested and conform to all specifications and requirements detailed on the contract or purchase order.



Approved Inspector:

A handwritten signature in dark ink, appearing to be a stylized 'Z' or similar character.

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Feb-22-2013

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 121922

INVOICE #: 64692

**CONTRACT OR
PURCHASE ORDER #** PO19086

DESCRIPTION: CROSSTUBE

QTY 1

P/N # D350-748-101

S/N # 91335

STRIP CADMIUM PLATING IAW MIL-STD-871.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector:

A handwritten signature in black ink, appearing to be 'S. S.', written over a horizontal line.

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Feb-22-2013

CONSIGNEE TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 121918

INVOICE #: 64692

**CONTRACT OR
PURCHASE ORDER #** PO19086

DESCRIPTION: CROSSTUBE

QTY 1

P/N # D350-748-101

S/N # 85566

STRIP CADMIUM PLATING IAW MIL-STD-871.

CERTIFICATE: I certify that the items indicated here on have been inspected and tested and conform to all specifications and requirements detailed on the contract or purchase order.



Approved Inspector: _____

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Mar-22-2013

CONSIGNEE TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 122650

INVOICE #: 65198

**CONTRACT OR
PURCHASE ORDER #** PO19238

DESCRIPTION: CROSSTUBE

QTY 1

P/N # d350-748-101

S/N # 85566

STRIP IAW MIL-STD-871. MPI IAW ASTM-E-1444. CADMIUM PLATING
IAW AMS-QQ-P-416C TYPE 2 YELLOW CLASS 1. FINAL MPI IAW
ASTM-E-1444. BAKE HEAT CHART # 13-231 AND # 13-259.

CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.



Approved Inspector: _____



LIQUID PENETRANT TEST REPORT

P- 12155

CLIENT Dart Aerospace DATE March 26 2013 PAGE 1 OF 1
ATTENTION Chantelle, Linda, Andy ACUREN JOB NO. 128-13-C0231 TIME AM ☐ PM ☒
ADDRESS 1270 Aberdeen St. PO/WO No. 19433
Hawthornbury, on WORK LOCATION As Address
PROJECT Pt - Wet Fluorescent Liquid penetrant Inspection ACCEPTANCE STD. ASTM 1417/AS 1417 REV./DATE 2005
ITEM(S) EXAMINED See Below

JOB DESCRIPTION PROCEDURE NO. LT-002 REV./DATE 2009 TECHNIQUE NO. LT-002 REV./DATE 2009
PART NO. PERFORMED A WET FLUO L.P.I. ON 100% OF THE EXTERNAL SURFACE ON
SCOPE Items mentioned. MATERIAL Aluminum C/S THICKNESS N/A

TEST DETAILS

METHOD ☒ FLUORESCENT ☐ VISIBLE
FAMILY BRAND Magnaflux
PENETRANT 21-87 MINIMUM DWELL TIME 45 MIN. ☒ WATER WASH ☐ SOLVENT REMOVABLE ☐ POST EMULSIFIED
PENETRANT REMOVER H₂O MINIMUM DRY TIME >10 MIN. BLACK LIGHT S/N 13790 ☐ OUTPUT > 1000 μ W/cm² ☐ AMBIENT < 2 fc
DEVELOPER SKD-52 MINIMUM DWELL TIME 30 MIN. LIGHTING EQUIP. ☐ FLASHLIGHT ☐ TROUBLELIGHT ☐ OUTPUT > 100 fc @ SURFACE
DEVELOPER TYPE ☒ NON AQUEOUS ☐ AQUEOUS ☐ DRY OTHER
LIGHT METER S/N 1098866 CAL DUE DATE oct 2013

TEST SURFACE

SURFACE CONDITION ☐ AS GROUND ☐ AS WELDED ☒ MACHINED ☐ SHOT BLASTED ☐ CLEAN BARE METAL
SURFACE TEMPERATURE ☐ < -4°C/ 20°F ☐ -4°C/ 20°F TO 10°C/50°F ☒ 10°C/50°F TO 52°C/125°F ☐ > 52°C/125°F
RESULTS- ☐ METRIC ☐ IMPERIAL

NO.	COMMENTS	ACCEPT	REJECT
1	Crosstube Installation, High Fuel W.O. TO 91355	?	?
2	Crosstube Installation, High Fuel W.P. ID 87340	?	?
3	Crosstube Ins High Fuel W.O. TO 85566	?	?
4	Crosstube Ins, High Fuel W.O. TO 85567	?	?

Item 1, 2, 3, 4 have pitting, Indications.

Item 1, 2, 3, 4, Kind Pitting, Indications, waiting for approval from Engineer

13-04-02

Scope of Services
The agreement of Acuren Group Inc. to perform services extends only to those services provided for in writing. Under no circumstances shall such services extend beyond the performance of the requested services. It is expressly understood that all descriptions, comments and expressions of opinion reflect the opinions or observations of Acuren Group Inc. based on information and assumptions supplied by the owner/operator and are not intended nor can they be construed as representations or warranties. Acuren Group Inc. is not assuming any responsibilities of the owner/operator and the owner/operator retains complete responsibility for the engineering, manufacture, repair and use decisions as a result of the data or other information provided by Acuren Group Inc. In no event shall Acuren Group Inc.'s liability in respect of the services referred to herein exceed the amount paid for such services.

Standard of Care
In performing the services provided, Acuren Group Inc. uses the degree, care and skill ordinarily exercised under similar circumstances by others performing such services in the same or similar locality. No other warranty, expressed or implied, is made or intended by Acuren Group Inc.

SIGNATURES

CLIENT REPRESENTATIVE Andy Sheldon PRINT ASheldon SIGNATURE
TECHNICIAN (SIGNATURE): Alexandre Michard DTR # E-120396
NAME (PRINT): Alexandre Michard REPORT REVIEWED BY:
CGSB LEVEL 2 SNT LEVEL 2 CGSB LEVEL 2 SNT LEVEL 2
CGSB REG. NO. 70148 CGSB REG. NO. 70148

WHITE - CLIENT COPY

CANARY - OFFICE COPY

PINK - TECHNICIAN COPY

GOLD - OFFICE COPY

Eric Downing

From: Patrick Smith
Sent: Monday, April 01, 2013 1:56 PM
To: Chris Provencal; Eric Downing
Cc: Linda Lacelle; Nigel Forbes
Subject: RE: pics of the cad platted

Thanks Chris,

Eric,
Make comments on the work order and proceed as required.

Pat

From: Chris Provencal
Sent: April-01-13 1:55 PM
To: Patrick Smith
Cc: Linda Lacelle; Eric Downing
Subject: RE: pics of the cad platted

It appears that the indications are from flaws in the CAD plating process, caused by the fact the tube was CAD platted twice. We don't see any CAD flaking off, so I can accept these tubes.

-Chris

From: Patrick Smith
Sent: Monday, April 01, 2013 12:50 PM
To: Chris Provencal
Cc: Linda Lacelle
Subject: FW: pics of the cad platted

Chris,

Here is the response from Cadorath,

Please notify us on your decision.

Pat

From: Linda Lacelle
Sent: April-01-13 12:18 PM
To: Patrick Smith
Cc: Eric Downing
Subject: Re: pics of the cad platted

Im not in today. I just need to know if these are good
So we can proceed with painting

Sent from my iPhone

On 2013-04-01, at 12:17 PM, "Patrick Smith" <psmith@dartaero.com> wrote:

I will come to see you.

Pat

From: Cisco Lindo [<mailto:cisco@cadorath.com>]

Sent: March-28-13 11:41 AM

To: Patrick Smith

Cc: 'chris jones'; 'Ed Balske'; 'Nick Wasylik'

Subject: RE: pics of the cad platted

Hi Patrick

We did not notice anything different with these after we did the chromate. Only the ends were stripped on these. We plated over the existing cad when they came back for the replating. Are the photos taken at MPI?

The cad deposit is higher than normal because of the plating over the existing deposit therefore it will show as a much courser finish than normal.

Are there any blisters on any of them? Is the cad flaking off?

Thanks

<image002.gif> **Francisco
Lindo
Production**

Cadorath Specialty -

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Serving industries that better the world

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Cadorath News

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From: Patrick Smith [<mailto:psmith@dartaero.com>]

Sent: Thursday, March 28, 2013 9:17 AM

To: chris jones

Cc: cisco@cadorath.com; Linda Lacelle; Nigel Forbes; Eric Downing

Subject: FW: pics of the cad platted

Importance: High

Hi Chris,

I hope all is well.

We have some concerns with the finish of the last batch of tubes we received.

These are the tubes which were stripped, sent back to Dart, ground, sent to Cadorth for a second cadmium coating.

Pat

From: Eric Downing
Sent: March-28-13 6:59 AM
To: Patrick Smith
Subject: pics of the cad platted

These are all the pics I have about the cross tubes

Eric Downing
QC Corrdinator
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